

REMARKS

Claims 31-55 are pending in the instant application. Claims 31-54 presently stand rejected. Claims 31, 43, 47-49, 52 and 54 are amended herein. Entry of this amendment and reconsideration of the pending claims are respectfully requested.

Claim Rejections – 35 U.S.C. § 112

Claims 31-54 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner rejected claim 31 stating, “[t]he claim does not have limitation to do the function to perform step process.” *Office Action* mailed July 14, 2003, page 2, section 2. Applicants have amended claim 31 to more particularly point out and distinctly claim the subject matter which Applicants’ regard as the invention.

The Examiner rejected claims 43 and 52 stating, “[a] gain medium without the recitation of any active medium or a laser device fails to emit an optical beam.” *Id.* Accordingly, Applicants have amended claim 43 to recite, in pertinent part, “a gain medium having ***an active region*** to emit an optical beam...” However, claim 52 is a mean-plus-function, which is to be examined according to the guidelines of 35 U.S.C. § 112, paragraph six, which recites

An element in a claim for a combination may be expressed as a means or step for performing a specified function **without recital of structure**, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof. (emphasis added)

Accordingly, Applicants should not be required to support the function “means for emitting an optical beam” in claim 52 with the recitation of structure. Rather, the Examiner is directed to the “Detailed Description of the Invention” for the corresponding structure.

The Examiner further rejected claims 43 and 52 stating, “[t]he claims fail to recite the structure to form the cavity because the gain medium and a reflector can not form the cavity, the cavity have been formed by two reflectors or mirror.” *Id.* Accordingly, Applicants have amended claim 43 to recite, in pertinent part, “first and

second reflectors positioned in the optical path and defining a laser cavity....” With respect to claim 52, Applicants again direct the Examiner to the specification for structure corresponding to “means for defining a laser cavity along the optical path....”

The Examiner further rejected claims 43 and 52 stating, “the claims fail to recite any structure in order to adjust the nominal operating setting in response to the voltage change to tune the optical element.” *Id* at page 3, section 2. Applicants respectfully traverse the instant rejection. Independent claim 42 recites the following structure

a control system operatively coupled to the voltage sensor and to an optical element positioned in the optical path, the control system ... to adjust the nominal operating setting in response to the voltage change to tune the optical element.

Applicants respectfully submit that a control system constitutes “structure.” The Examiner further stated, “[h]ow can the optical element, control system to adjust the nominal operating.” *Id*. Applicants point out “breadth of a claim is not to be equated with indefiniteness.” M.P.E.P. § 2173.04. Furthermore, “[a] functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used.” M.P.E.P. § 2173.05(g). The question of “how” is more properly addressed under 35 U.S.C. § 112, first paragraph, of which Applicants defer to the specification for a discussion as to “how” the claimed control system adjusts the nominal operating setting. Applicants further note that dependent claim 45 further defines the control system. With respect to claim 52, Applicants direct the Examiner to the specification for structure corresponding to “means for adjusting the means for producing the loss characteristic in response to the voltage change.”

Applicants believe the above amendments and comments fully address the Examiner’s § 112, second paragraph concerns. Accordingly, Applicants respectfully request the Examiner to withdraw the instant § 112, second paragraph rejections of claims 31-54.

Claim Rejections – 35 U.S.C. § 102

Claims 31-49 and 52-54 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,251,222 to Hester et al. ("Hester").

A claim is anticipated only if each and every element of the claim is found in a single reference. M.P.E.P. § 2131 (citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628 (Fed. Cir. 1987)). "The identical invention must be shown in as complete detail as is contained in the claim." M.P.E.P. § 2131 (citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226 (Fed. Cir. 1989)).

Amended independent claim 31 now recites, in pertinent parts,

sensing the voltage change across the active region of the gain medium induced in response to the deviating;
generating an error signal in response to the sensed voltage change; and
adjusting the nominal operating setting of the optical element in response to the error signal to tune the optical element.

Applicants respectfully submit that Hester fails to disclose generating an error signal in response to a sensed voltage change across an active region of a gain medium, nor does Hester disclose adjusting a nominal operating setting of an optical element in response to the error signal.

In fact, Hester discloses

Methods other than optical methods can be used for detection of resonant or nonresonant conditions within the cavity. For instance, as shown in FIG. 5, a voltage and/or current measuring device 70 can be connected across the gain medium 72 to detect internal conditions therein. The voltage across gain medium 72 varies depending upon the extent of stimulated emission induced therein by light reflected back through the cavity when the characteristic spatial patterns possess duality.

Hester, col. 8, lines 11-19. Therefore, Hester discloses measuring voltage across a gain medium to detect a resonant or nonresonant condition within the cavity. However, Hester fails to disclose generating an error signal in response to the voltage measured across gain medium 72. Hester also fails to disclose adjusting a nominal operating setting of an optical element in response to an error signal.

Consequently, Hester fails to disclose each and every element of claim 31, as required under M.P.E.P. § 2131. Accordingly, request that the instant § 102 rejection of claim 31 be withdrawn.

Independent claim 43 recites, in pertinent parts, “the control system ... to adjust the nominal operating setting in response to the voltage change to tune the optical element.” As discussed above, Applicants respectfully submit that Hester fails to disclose adjusting a nominal operating setting in response to a voltage change across an active region.

Independent claim 52 recites, in pertinent parts, “means for adjusting the means for producing the loss characteristic in response to the voltage change.” As discussed above, Applicants respectfully submit that Hester fails to disclose this recited element of claim 52.

Consequently, Hester fails to disclose each and every element of claims 43 and 52, as required under M.P.E.P. § 2131. Accordingly, request that the instant § 102 rejections of claims 43 and 52 be withdrawn.

Claim Rejections – 35 U.S.C. § 103

Claims 50-51 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hester in view of U.S. Patent No. 6,366,592 to Flanders.

“To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. All words in a claim must be considered in judging the patentability of that claim against the prior art.” M.P.E.P. § 2143.03.

Independent claim 31 recites, in pertinent parts,

generating an error signal **in response to the sensed voltage change**;
and
adjusting the nominal operating setting of the optical element in response to the error signal to tune the optical element.

As discussed above, Hester fails to disclose, teach, or fairly suggest the aforementioned recited elements of independent claim 31. In fact, Hester fails to even mention generation of an error signal. Flanders also fails to disclose, teach, or fairly suggest generating an error signal **in response to a sensed voltage change**. Referring to FIG. 10 of Flanders, Flanders discloses a beam splitter 310 that splits an output beam from tunable laser system 116 (including SOA chip 422) to direct input beam 312 to wavelength locker 118. *Flanders*, col. 4, lines 28-32. The magnitude of the input beam

312 is converted into an analog signal by wavelength locker 118, which is in turn converted to a digital signal by A/D 352. See, e.g., *Flanders*, col. 5, lines 19-26. The digital information from wavelength locker 118 is fed into wavelength control system 354. Wavelength control system 354 uses this digital information to control tunable filter 410 and cavity length modulator 412. See, e.g., *Flanders*, col. 9, lines 12-20. Thus, *Flanders* fails to teach or suggest generating an error signal **in response to a sensed voltage change**.

Consequently, the combination of Hester and *Flanders* fails to teach or suggest all elements of independent claim 31, as required under M.P.E.P. § 2143.03.

Independent claim 43 recites, in pertinent part, “the control system ... to adjust the nominal operating setting [of the optical element] in response to the voltage change.” Independent claim 52 recites, in pertinent part, “means for adjusting the means for producing the loss characteristic in response to the voltage change.” For the reasons discussed above, Applicants request that the instant § 103 rejections of independent claims 43 and 52 be withdrawn.

Dependent claims 32-42, 44-51, 53, and 54 are patentable over the prior art of record for at least the same reasons as discussed above in connection with their respective independent claims, in addition to adding further limitations of their own. Accordingly, Applicants respectfully request that the instant § 102 and § 103 rejections for claims 32-42, 44-51, 53, and 54 be withdrawn.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants believe the applicable rejections have been overcome and all claims remaining in the application are presently in condition for allowance. Accordingly, favorable consideration and a Notice of Allowance are earnestly solicited. The Examiner is invited to telephone the undersigned representative if the Examiner believes that an interview might be useful for any reason.


CHARGE DEPOSIT ACCOUNT

It is not believed that extensions of time are required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a). Any fees required therefore are hereby authorized to be charged to Deposit Account No. 02-2666. Please credit any overpayment to the same deposit account.

Respectfully submitted,

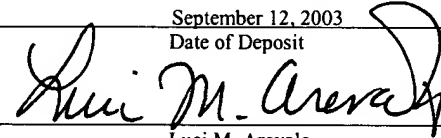
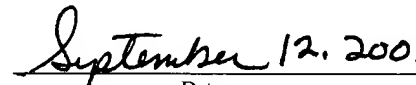
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Date: Sept. 12, 2003


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